<u>REMARKS</u>

Reconsideration and allowance are respectfully requested in light of the above amendment and the following remarks.

Claim 8 has been canceled, thereby obviating the rejection applied thereto.

Claims 1-3 stand rejected, under 35 USC §102(e), as being anticipated by Hirahara et al. (US 2002/0160252). Claims 1-3 also stand rejected, under 35 USC §103(a), as being unpatentable over Hirahara. Claim 4 stands rejected, under 35 USC §103(a), as being unpatentable over Hirahara in view of Kawahara et al. (US 2002/0045089). Claim 5 stands rejected, under 35 USC §103(a), as being unpatentable over Hirahara in view of Grot (US 6,641,862). Claim 6 stands rejected, under 35 USC §103(a), as being unpatentable over Hirahara in view of Menashi et al. (US 2003/0022055). Claim 7 stands rejected, under 35 USC §103(a), as being unpatentable over Hirahara in view of Sugawara et al. (US 6,818,339). The Applicants respectfully traverse these rejections.

Applicants note that, as in the July 18, 2005 Office Action, the Final Rejection asserts the contradictory propositions that Hirahara necessarily anticipates (through inherency) the subject matter defined by claim 1, <u>except</u> with respect to claimed features that may only be achieved by optimally modifying parameters of Hirahara's structure that are known to be result effective (See

5

Final Rejection page 3, last sentence of first paragraph, and page 4, last sentence of first paragraph). A reference either anticipates a claim or it does not; partial anticipations are not recognized in patent law. Since the Final Rejection expressly acknowledges that some of the claimed features may be achieved only by applying specific constraints, to Hirahara's disclosed structure, that are intended to optimize result-effective parameters (see paragraph bridging pages 3 and 4), it necessarily follows that Hirahara cannot inherently anticipate the subject matter defined by claim 1 because Hirahara does not impose a requirement for the specific constraints.

As mentioned above, both the Office Action and the Final Rejection propose that Hirahara's structure could be modified to achieve the claimed subject matter by optimizing parameters that are known to be effective for achieving a desirable result. Applicants note that the Final Rejection failed to respond to the invitation, provided in Applicants' October 18, 2005 Response, to identify: (1) the desirable result that is known by skilled artisans to be achievable by optimizing the parameters discussed in the Office Action (and also discussed in the Final Rejection) and (2) why the desired result would motivate the artisan to modify Hirahara's structure to achieve the claimed subject matter.

The Office Action and Final Rejection cite *In re Boesch* for the proposition that the discovery of the optimum value of a result-effective variable in a known process is ordinarily within the skill of an artisan (see Final Rejection page 4, last sentence of first paragraph). However, an obviousness rejection must be supported by a showing of motivation, within the prior art, to modify a structure so as to achieve the claimed subject matter. The Final Rejection does not identify a result, known by skilled artisans to be obtainable from varying the parameters identified in the Final Rejection, that would motivate the artisan to modify Hirahara's structure. Without a nexus between the result and the motivation for modifying Hirahara's structure, a skilled artisan would have no reason to optimize parameters in the manner identified in the Final Rejection. Thus, the evidentiary record does not support an obviousness rejection.

In accordance with the discussion provided above, Applicants submit that the subject matter defined by claim 1 is neither anticipated nor rendered obvious by Hirahara. Since Hirahara is cited for teaching the features related to the discussion above as similarly recited in claim 7, claim 7 is also not rendered obvious by the applied references. Therefore, allowance of claims 1 and 7 and all claims dependent therefrom is warranted.

7

While Applicants appreciate the additional explanation provided in the Response to Arguments section of the Final Rejection and the meticulous calculations provided in support thereof, they respectfully submit that the calculations do not account for the reality of manufacturing a gas diffusion layer fabric of the type recited in independent claims 1 and 7. Applicants submit that is impossible to determine the thickness $(Y)$ of a baked (i.e., carbon) fiber fabric and the distance $(X)$ between its threads solely from information of the pre-baked fiber material's diameter and the total distance between threads per inch, as proposed in the Final Rejection. The reason it is impossible is because the diameters of the pre-baked fiber material and baked fiber are different.

Carbon fiber, as recited in the independent claims, is obtained by baking a fiber material. And the diameter of the carbon fiber of a final product varies depending on the baking condition (e.g., temperature, time, tension, atmospheric gas composition, etc.). Even for final products produced under the same conditions, there are dense and loose thread parts that create a variation in the thread dimension.

Accordingly, the total diameter of the carbon fibers per inch cannot be determined by merely multiplying the number of material fibers per inch by the diameter of the pre-baked fiber (e.g., 10μm

8

(diameter) x 70 (fibers/inch) = 0.07cm), as proposed in the Final Rejection. What can be determined is that the total diameter, for this example, becomes less than 0.07cm after the fiber is baked.

Moreover, with the present invention, single fibers having a diameter of 10µm are twisted into a bundle having a metric number of from 20 to 60, and then two obtained bundles are stranded into a double stranded thread, for example. This means that the diameter of the resultant thread is greatly different from 0.07cm.

From the discussion above, it may be concluded that it is impossible to determine the values of X and Y solely from the diameter of the fiber material and the total distance between threads per inch. Furthermore, for the present invention, the parameters that can determine the characteristics of a fabric include the stranded strength of thread, the distance between threads, etc., after the baking. The applied references fail to disclose the details about this point. Accordingly, the value of X after the baking cannot be pre-determined in the manner proposed in the Final Rejection, thus it is not clear that the equation $1.4 \leq X/Y \leq 3.5$ can be satisfied.
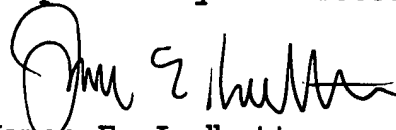
Accordingly, Applicants submit that applied references do not disclose or suggest the above-mentioned feature of claims 1 and 7. Furthermore, the applied references are deficient in motivation to arrive at the detailed conditions that constitute the invention

defined by claims 1 and 7. As a result, claims 1 and 7 are neither anticipated nor rendered obvious by the applied references. Therefore, allowance of claims 1 and 7 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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JEL/DWW/att

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10